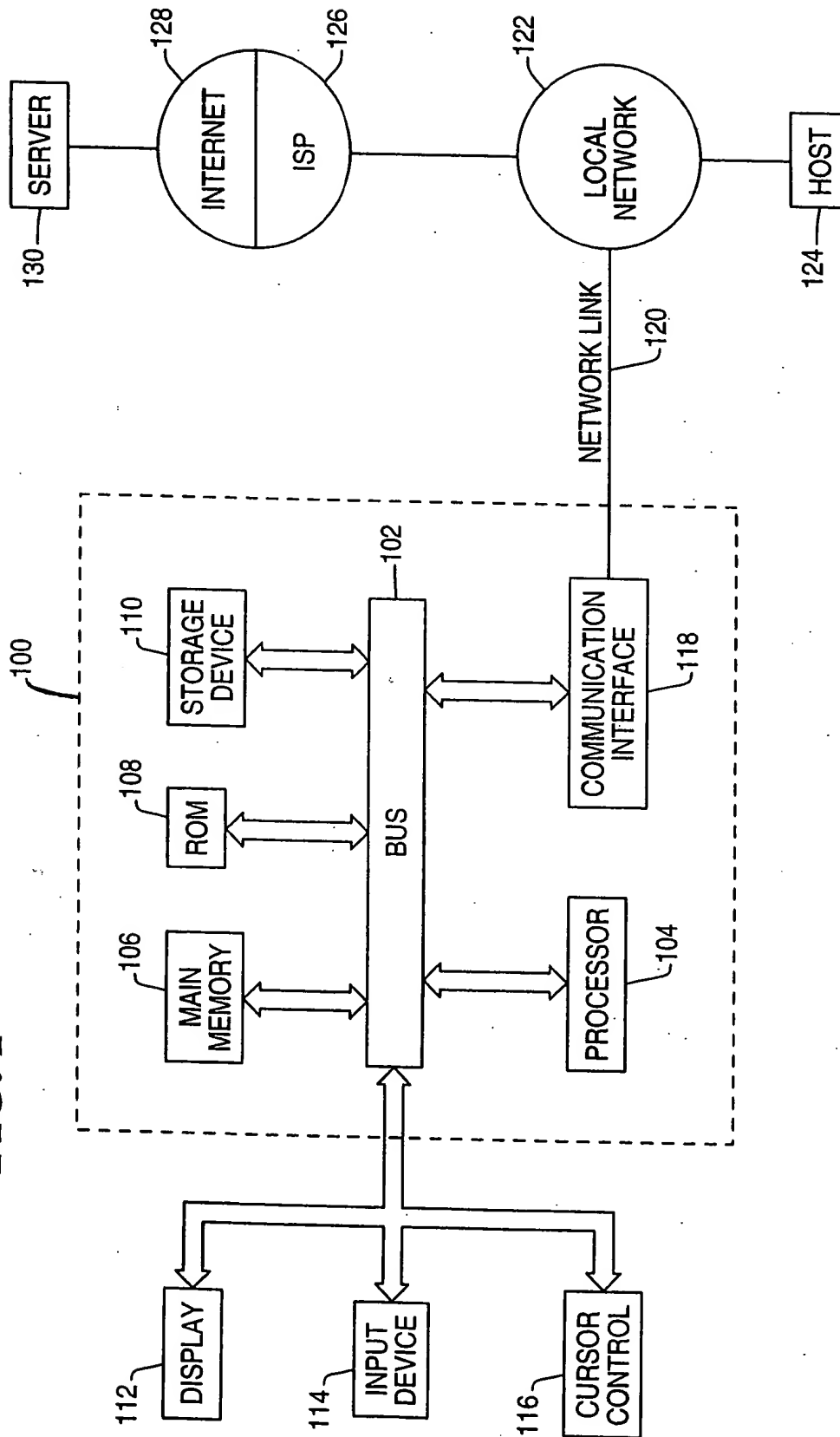


**Amendments to the Drawings:**

The attached 23 sheets of drawings include changes to Figs. 1, and 4-25. The sheets of drawings, which include drawings 1 and 4-25, replace the original drawings 1 and 4-25. In Figs. 1, 10, 12, 14, 16 and 23 the margins have been adjusted. In Figs. 4-25, line quality has been corrected. In Fig. 7, an incorrect and redundant reference "750" has been deleted and a typographical error has been corrected by changing reference number "42" to reference number "742". In Fig. 9, redundant reference number "960" has been changed to reference number "961".

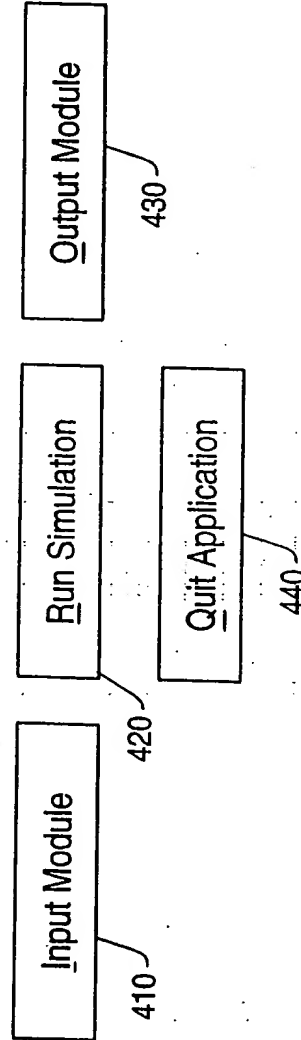
FIG. 1





# Lane And Front-End Effectiveness Model

Developed by  
Human Factors Engineering



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FIG. 4

400

FIG. 5

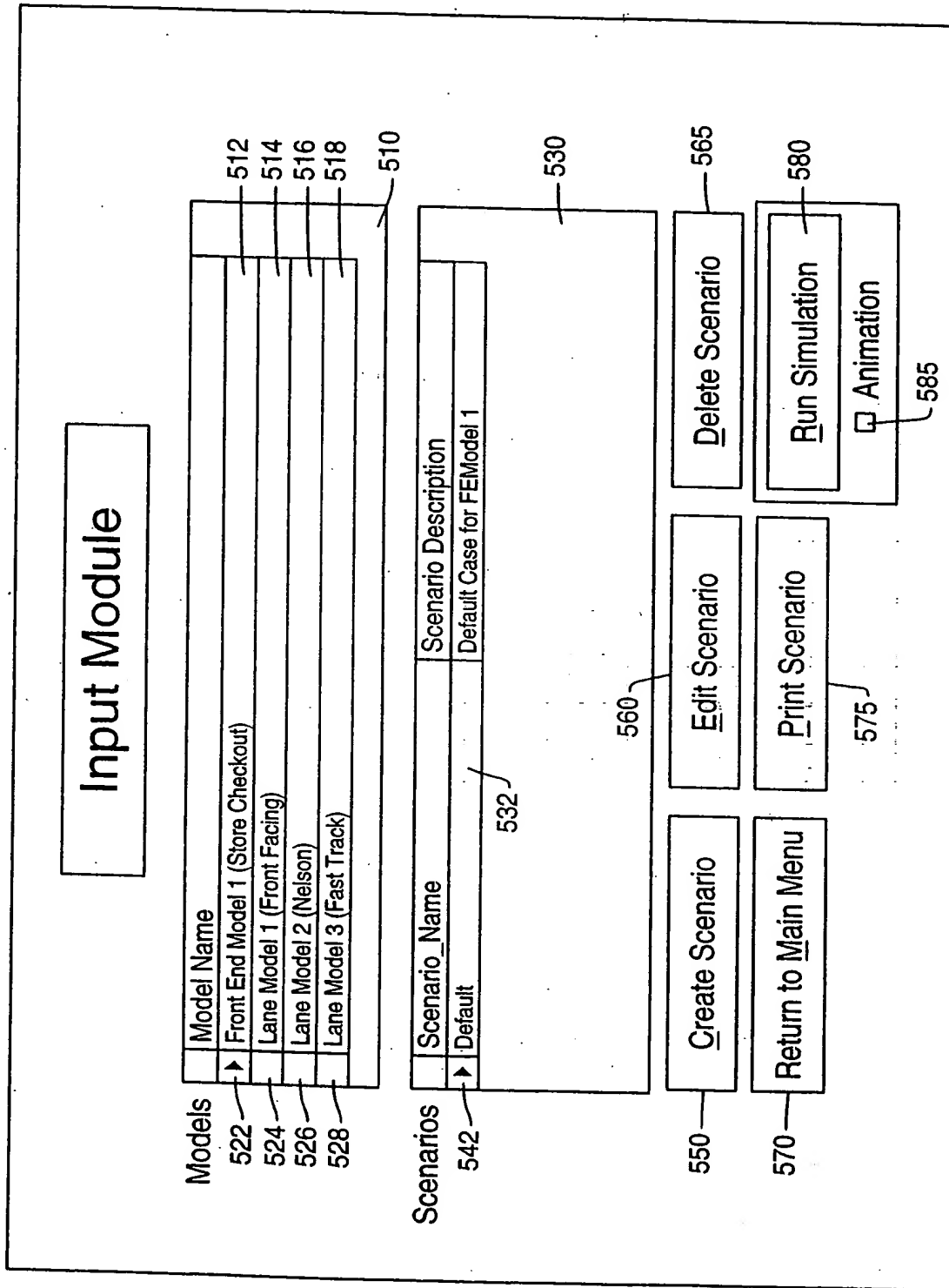


FIG. 6

600

## Create Parameter File

Model Name

Front End Model 1 (Store Checkout)

Please Select the Scenario You Want to Clone

Scenario_Name	Scenario Description
▶ Default	Default Case for FEModel 1

Please Type Scenario Name and Description in the Text Boxes Below

Scenario Name

Test 1

Scenario Description

Add 4 Checkstands: 1 Express & 3 Regular

Create and Return

Return without Creating

FIG. 7

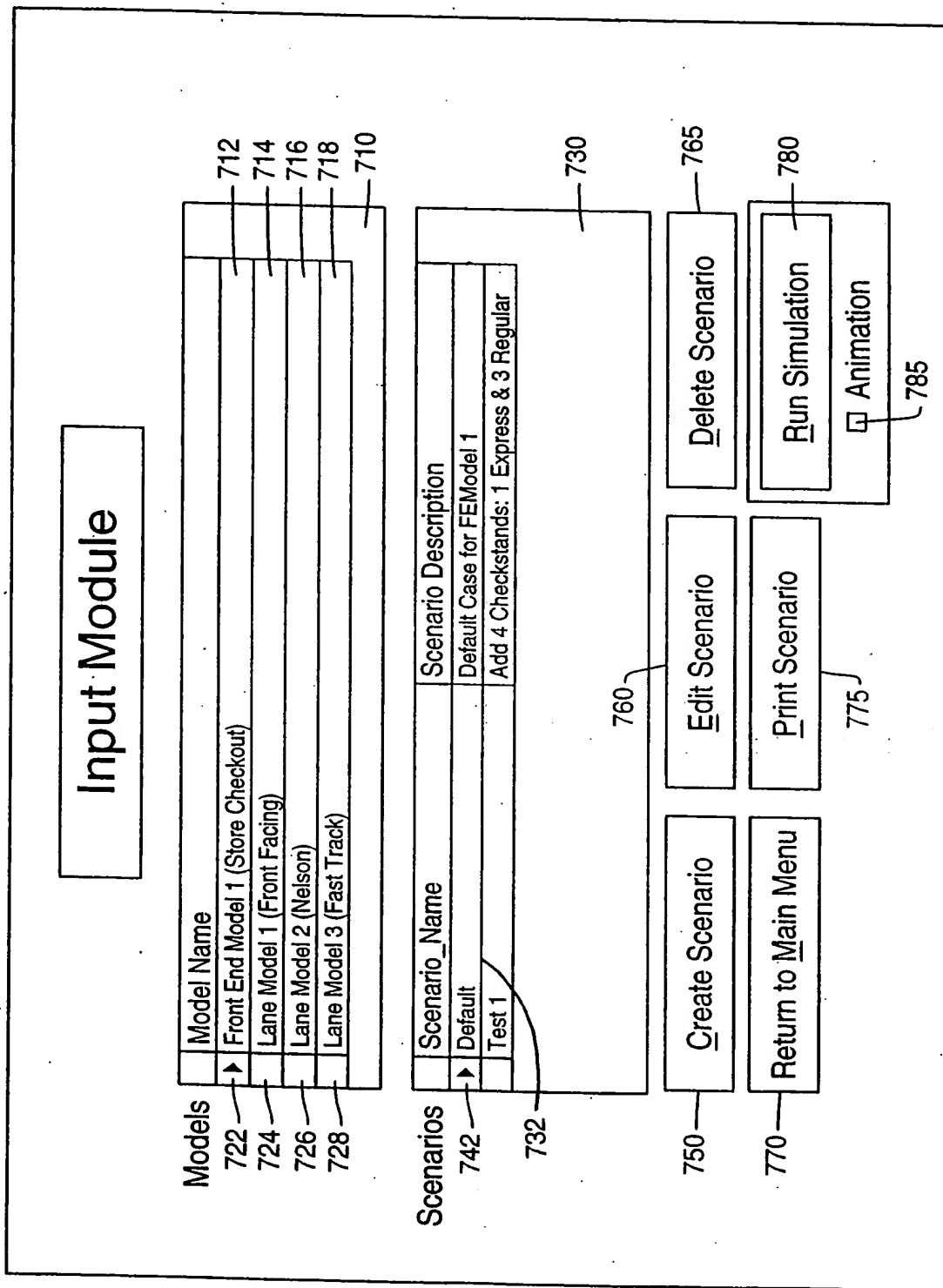


FIG. 8

## Edit Parameter File

Model Name Front End Model 1 (Store Checkout)

Scenario Name Test 1

**Parameter Categories**

Transaction Itemization

Configuration

Transaction Finalization

Customer Demand

Transaction Bagging

Schedules

Transaction Intervention

Model Parameters

Parameter	Value	Range	Description
Start time of the simulation scenario (hours)	6	0 to 24 (hours)	Start time of simulation scenario in hour from midnight
End time of the simulation scenario (hours)	23	0 to 24 (hours)	End time of simulation scenario in hours from midnight. End time must be greater than Start time
Number of Fast-Track lanes	1	0 to 47	Number of Fast-Track lanes at the front-end. The total number of all lanes cannot exceed 48
Number of Express lanes	3	0 to 47	Number of Express lanes at the front-end. The total number of all lanes cannot exceed 48
Number of Regular lanes	13	1 to 48	Number of Regular lanes at the front-end. The total number of

Lane Type

F

E

R

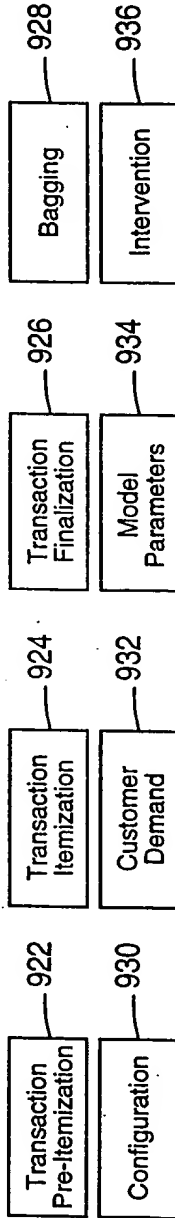
All

Return to Input Form

# Edit Parameter File

Model Name  Scenario Name

## Parameter Categories



Parameter	Value	Range	Description
Time length of scenario	60	0.0 to 1440.0 (minutes)	Length of the simulation scenario in minutes
Number of baggers	1	0, 1, or 2	Number of baggers; options are 0 baggers, 1 bagger for both lanes, or 2 baggers - one for each lane
Maximum number of items on front belt	20	1 to 200	Maximum number of items on front belt
Maximum number of items in bagging area	20	1 to 200	Maximum number of items on back belt and bagging area
Probability of basket icon	0.5	0.0 to 1.0	Probability a customer uses a basket (vs. cart) when their

[Return to Input Form](#)

FIG. 9

900





FIG. 10

1000

Arrival Rate Schedule

1040

Time Interval	Number of Arrivals
4:46 AM -- 5:00 AM	0
5:01 AM -- 5:15 AM	0
5:16 AM -- 5:30 AM	0
5:31 AM -- 5:45 AM	0
5:46 AM -- 6:00 AM	0
6:01 AM -- 6:15 AM	4
6:16 AM -- 6:30 AM	12
6:31 AM -- 6:45 AM	8
6:46 AM -- 7:00 AM	20
7:01 AM -- 7:15 AM	28
7:16 AM -- 7:30 AM	20
7:31 AM -- 7:45 AM	24
7:46 AM -- 8:00 AM	28

1050

Enter the number of arrivals per hour in each 15-minute time interval

1015

1010

1060

Print Schedule

1065

Return to Edit Form

Average Basket Sizes		
Time Interval	Avg Basket Size	
12:01 AM -- 12:15 AM	0	
12:16 AM -- 12:30 AM	0	
12:31 AM -- 12:45 AM	0	
12:46 AM -- 1:00 AM	0	
1:01 AM -- 1:15 AM	0	
1:16 AM -- 1:30 AM	0	
1:31 AM -- 1:45 AM	0	
1:46 AM -- 2:00 AM	0	
2:01 AM -- 2:15 AM	0	
2:16 AM -- 2:30 AM	0	
2:31 AM -- 2:45 AM	0	
2:46 AM -- 3:00 AM	0	
3:01 AM -- 3:15 AM	0	

Print Basket Sizes

Return to Edit Form

FIG. 11

1100



Schedules

1205

1220

Super Helpers

1225

Baggers

1230

All Personnel

1215

1240

Regular Cashiers

1250

Express Cashiers

1215

Fast-Track Cashiers

Time Interval	Regular Cashiers
12:01 AM -- 12:30 AM	0
12:31 AM -- 1:00 AM	0
1:01 AM -- 1:30 AM	0
1:31 AM -- 2:00 AM	0
2:01 AM -- 2:30 AM	0
2:31 AM -- 3:00 AM	0
3:01 AM -- 3:30 AM	0
3:31 AM -- 4:00 AM	0
4:01 AM -- 4:30 AM	0
4:31 AM -- 5:00 AM	0
5:01 AM -- 5:30 AM	0
5:31 AM -- 6:00 AM	0
6:01 AM -- 6:30 AM	2
6:31 AM -- 7:00 AM	2
7:01 AM -- 7:30 AM	3
7:31 AM -- 8:00 AM	3
8:01 AM -- 8:30 AM	3

1260

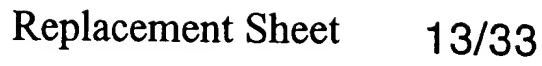
Print Schedules

1265

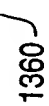
Return to Edit Form

FIG. 12

1200



1300



## Delete and Return

## Return without Deleting

-1365



Scalar Input Values

1 of 1+ 88% Total: 141 100% 141 of 141

### Input Parameters For Front End Model 1 (Store Checkout)

February 24, 1999

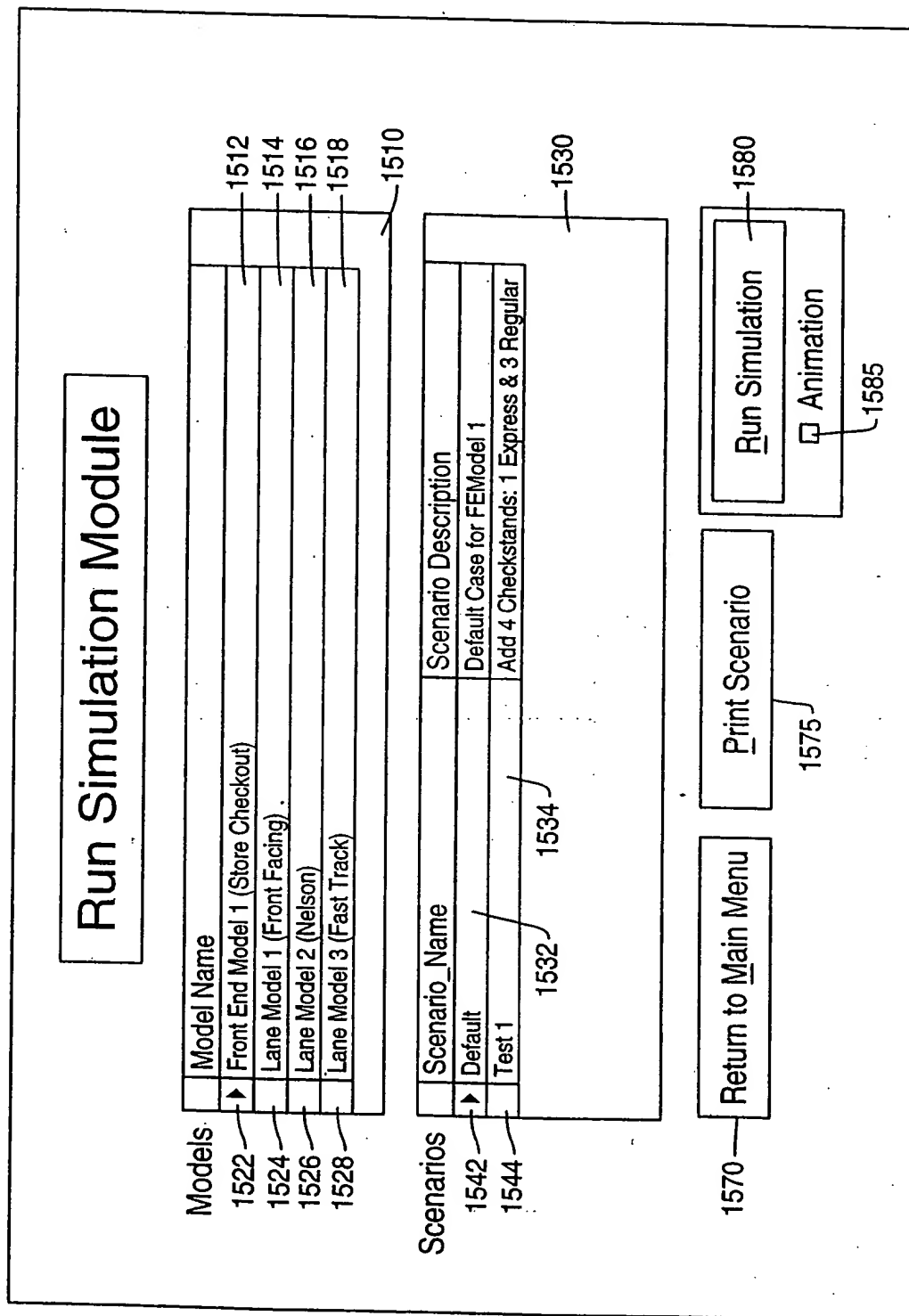
Scenario Name: Default

Scenario Description: Default Case For FEM

Parameter	Value	Range	Description
Start time of the simulation scenario (hours)	6	0 to 24 (hours)	Start time of the simulation scenario in hour from midnight. Start time must be less than End time.
End time of the simulation scenario (hours)	23	0 to 24 (hours)	End time of the simulation scenario in hours from midnight. End time must be greater than Start time.
Number of Fast-Track lanes	1	0 to 47	Number of Fast-Track lanes at the front-end. The total number of all lanes (Fast-Track + Express + Regular) cannot exceed 48.
Number of Express lanes	3	0 to 47	Number of Express lanes at the front-end. The total number of all lanes (Fast-Track + Express + Regular) cannot exceed 48.
Number of Regular lanes	13	1 to 48	Number of Regular lanes at the front-end. Must be at least 1 Regular lane. The total number of all lanes (Fast-Track + Express + Regular) cannot exceed 48.

FIG. 14

FIG. 15





# Replacement Sheet 16/33

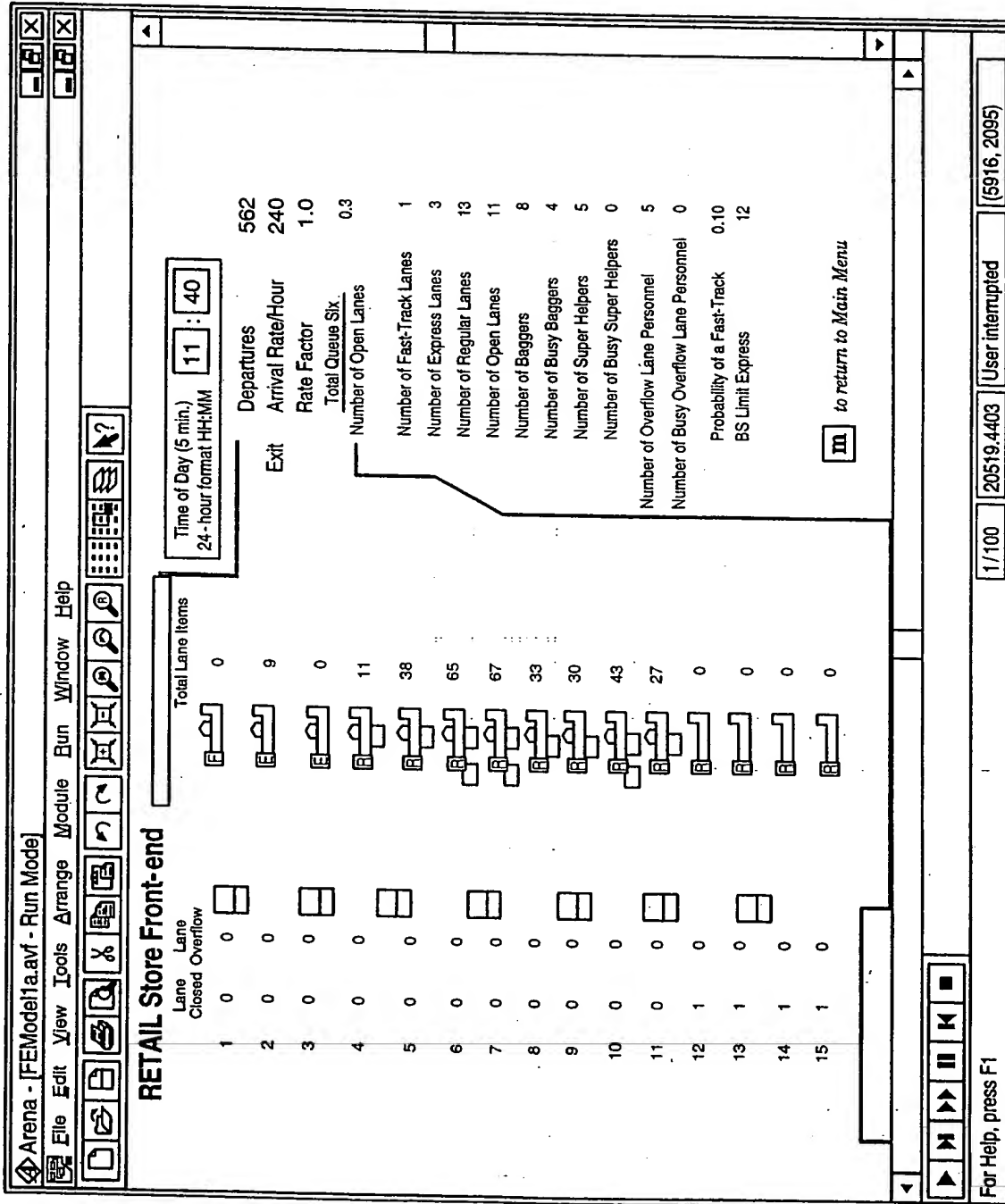


FIG. 16

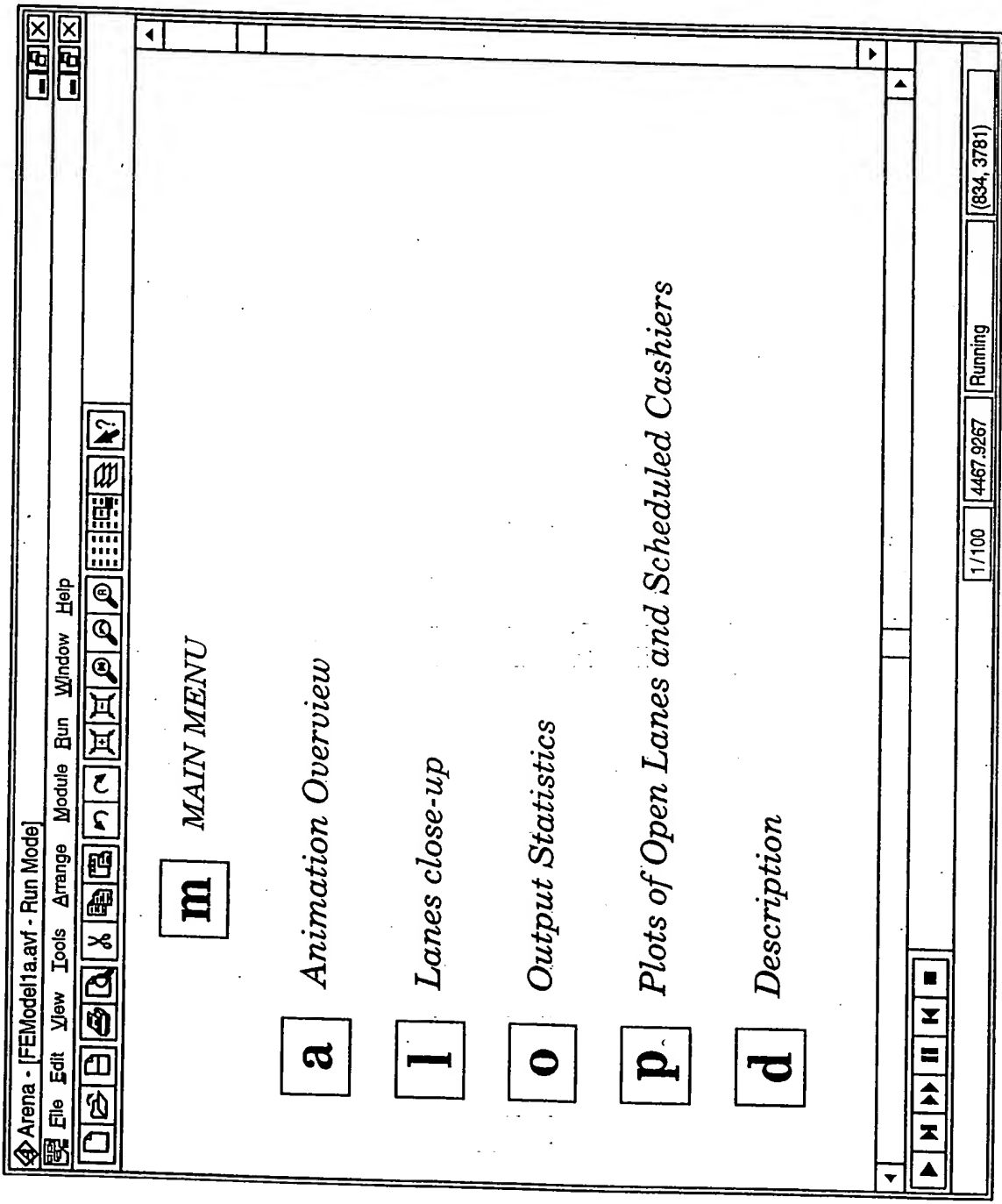


FIG. 17



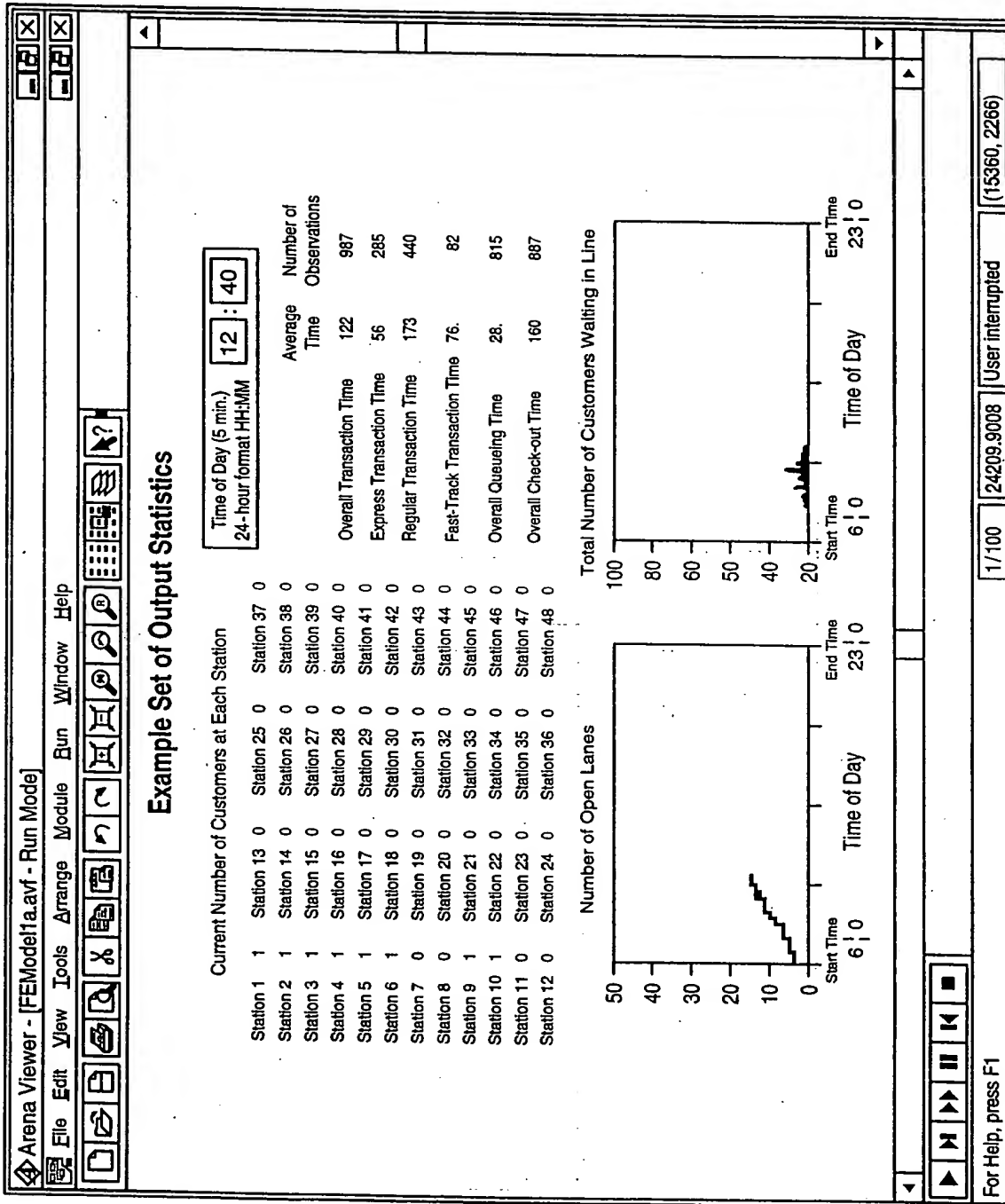
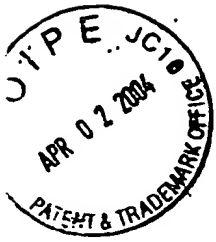


FIG. 18

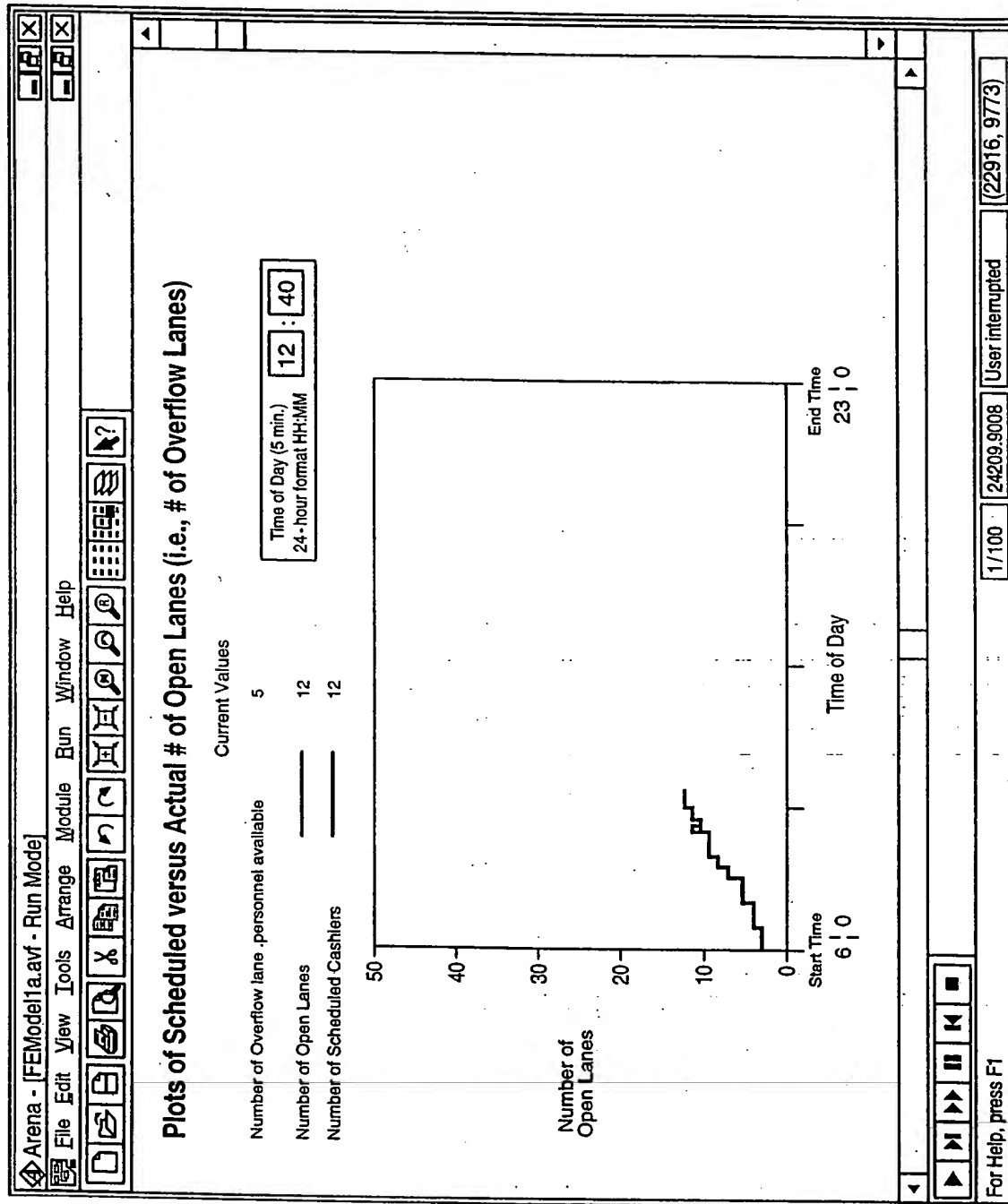


FIG. 19

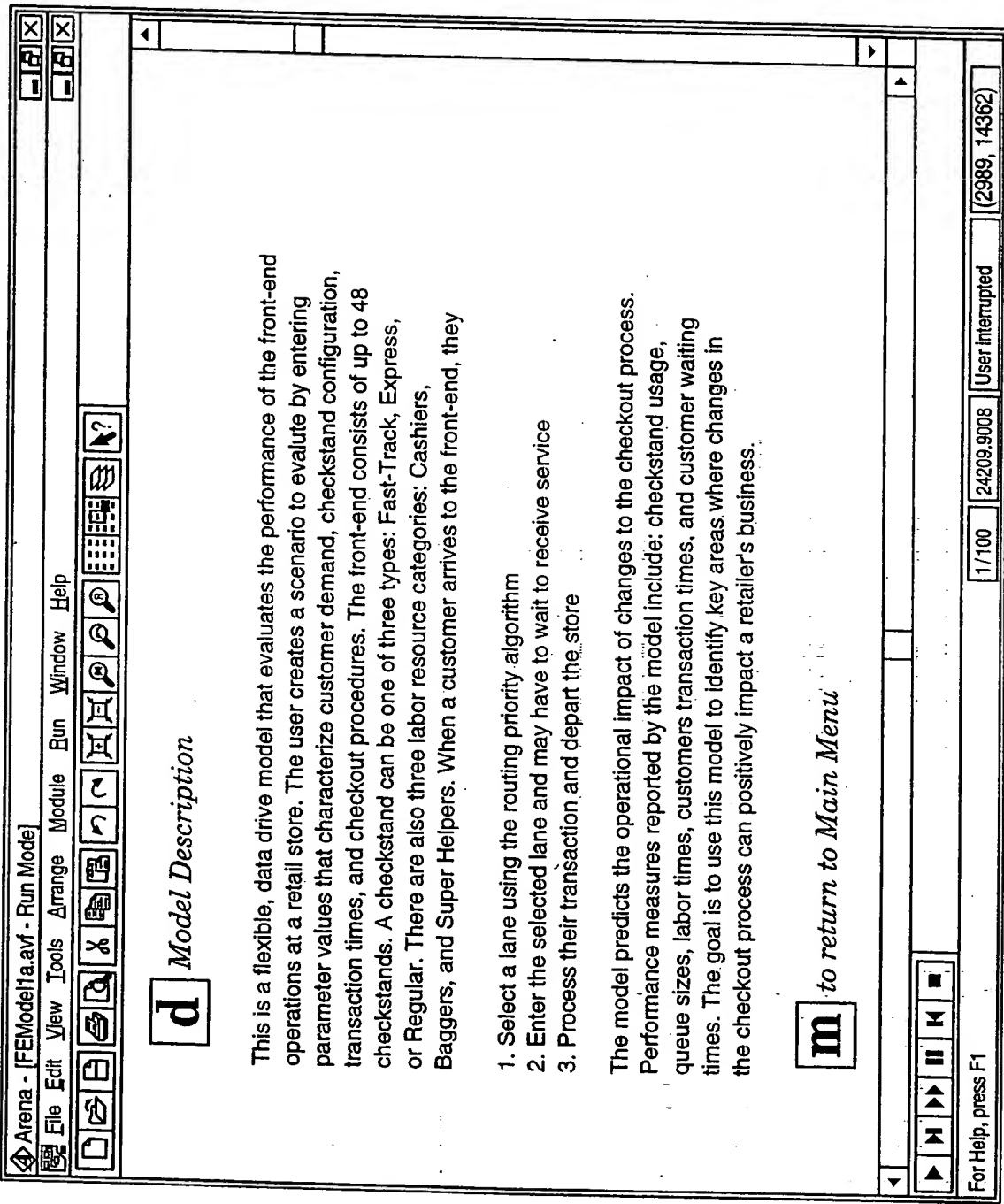


FIG. 20

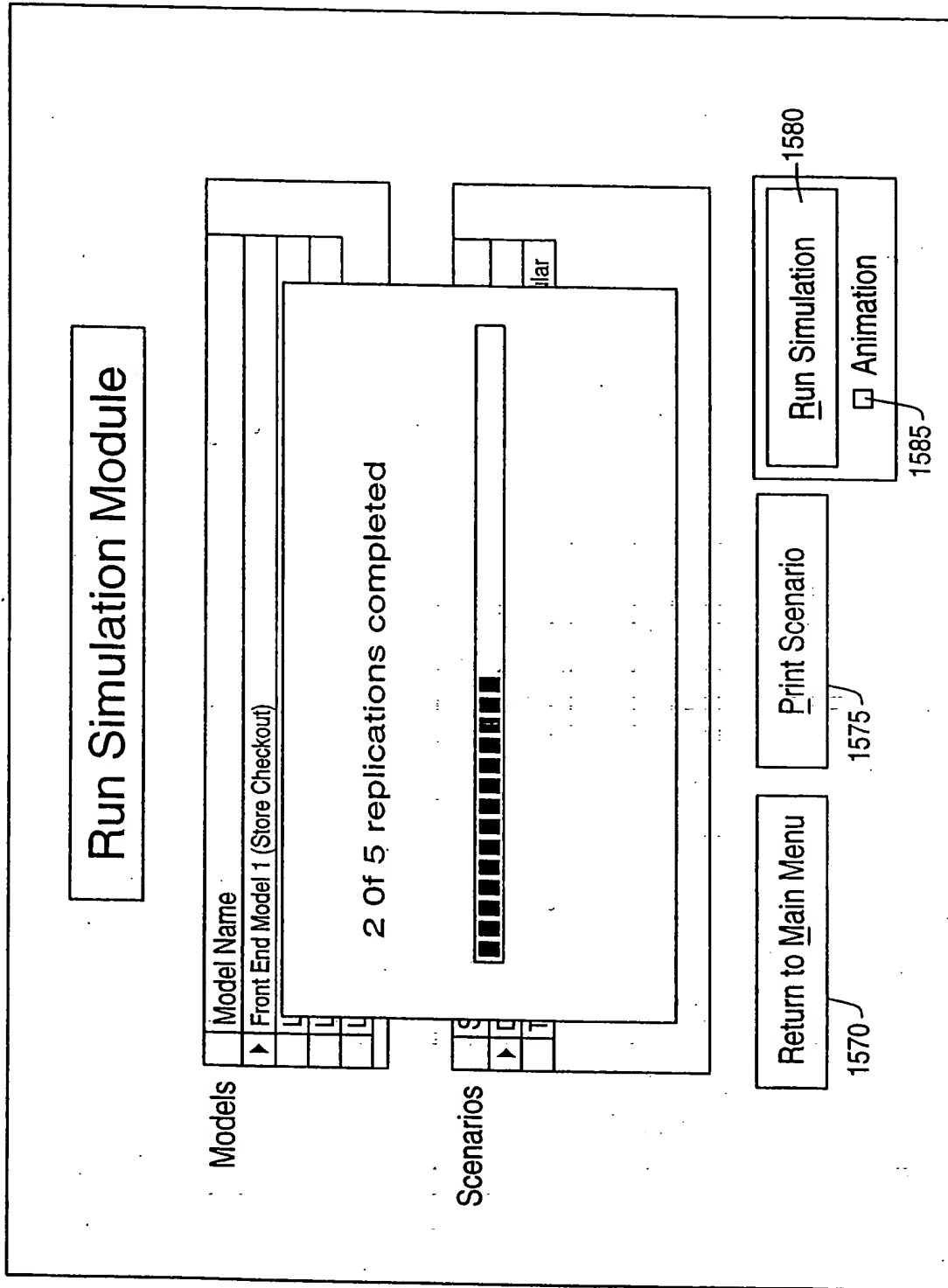


FIG. 21

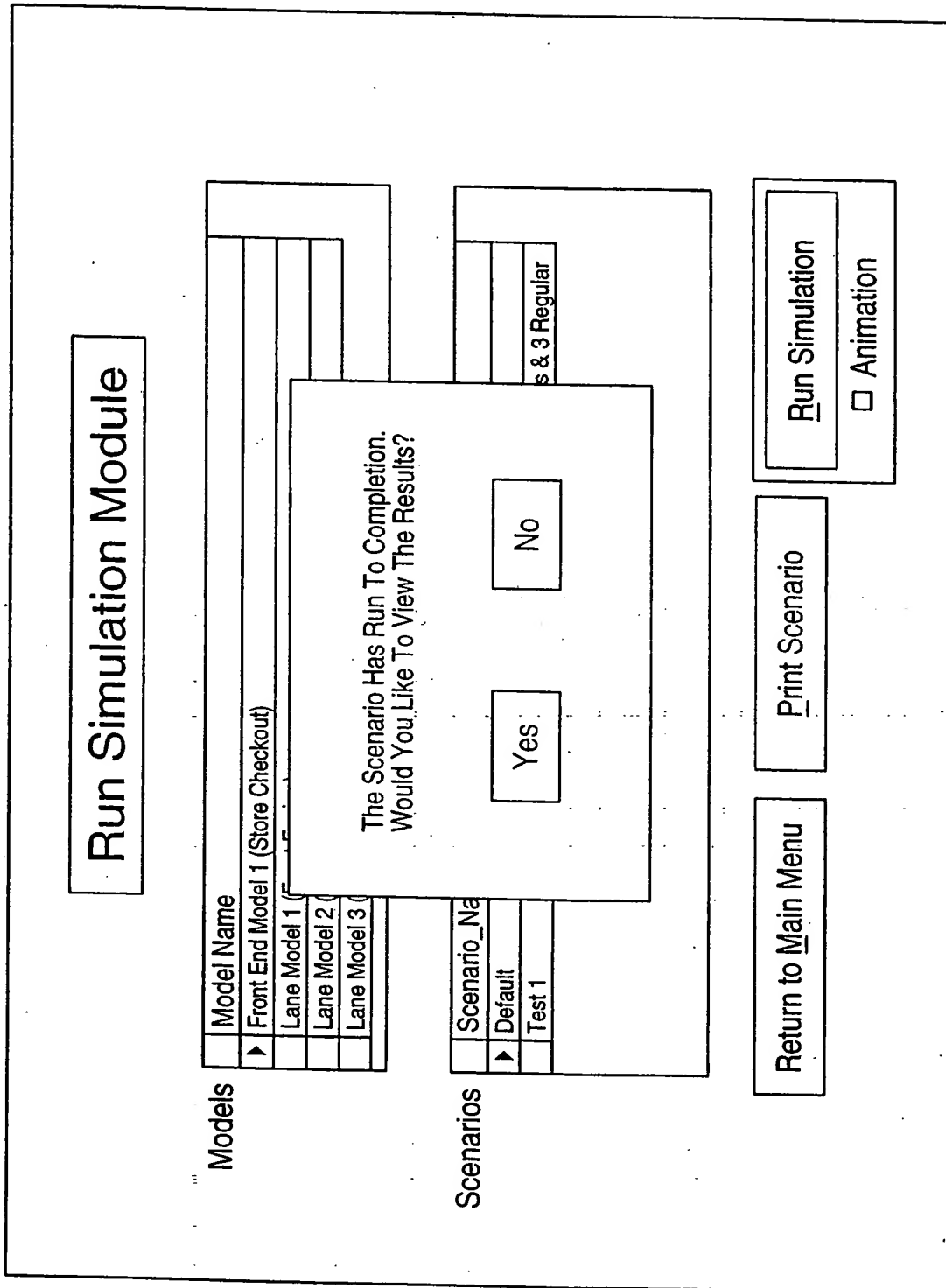


FIG. 22

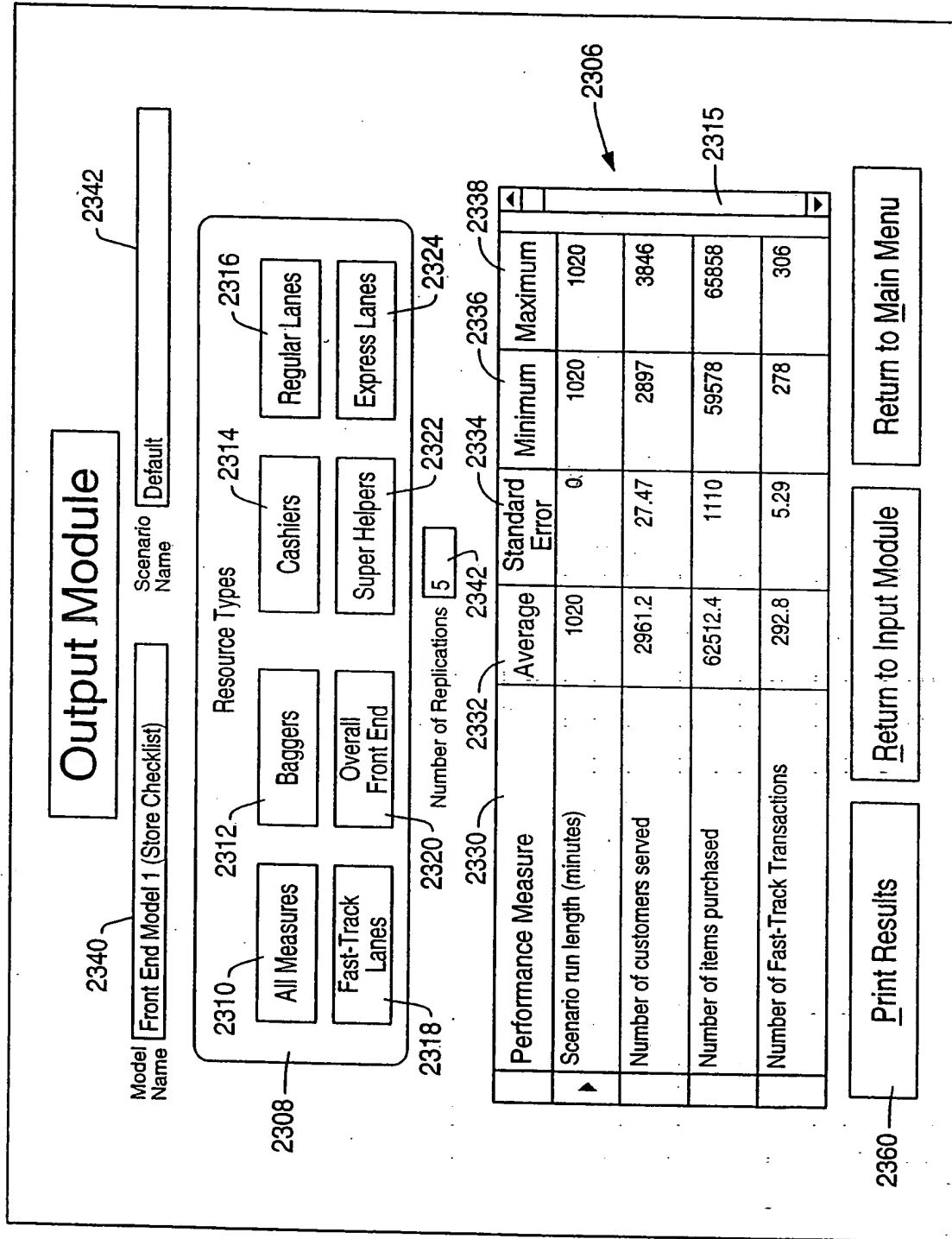


FIG. 23

2300

# Output Module

Model Name

Scenario Name

Number of Replications

All Measures

Customer

Cashier

Lane

Bagger

Performance Measure	Average	Standard Error	Minimum	Maximum
Scenario run length (minutes)	60	0	60	60
Total number of transactions lane 1	19.06	0.45	11	26
Total number of transactions lane 2	18.88	0.45	11	24
Total number of transactions both lanes	37.94	0.88	22	58

Lane #

1

2

All

Print Results

Return to Input Module

Return to Main Menu

FIG. 24

2400

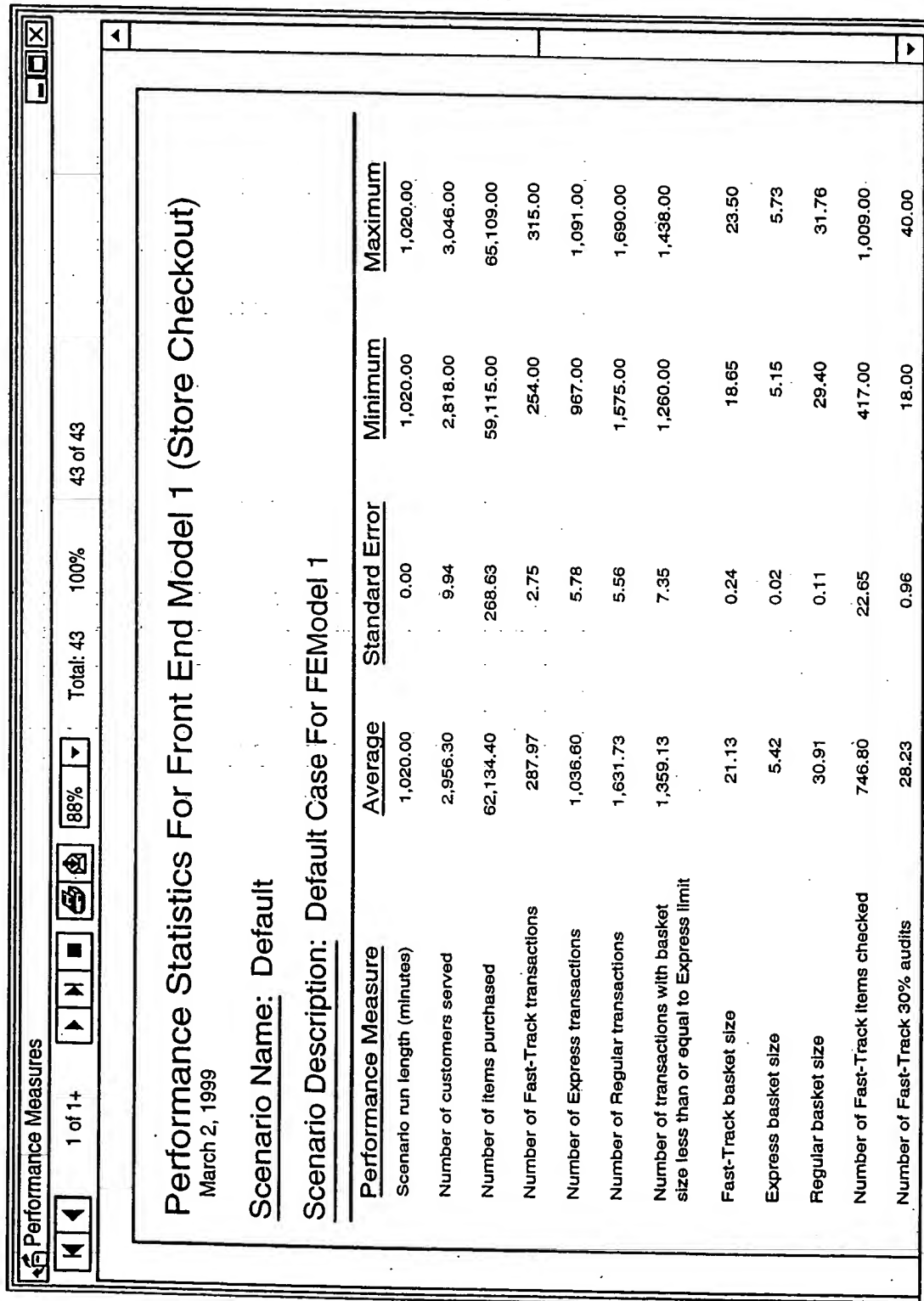


FIG. 25